UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,939	07/29/2003	Kalpana Shyam	SVL920020093US1	9038

47069	7590	02/13/2006	

KONRAD RAYNES & VICTOR, LLP
ATTN: IBM54
315 SOUTH BEVERLY DRIVE, SUITE 210
BEVERLY HILLS, CA 90212

EXAMINER
HARPER, LEON JONATHAN

ART UNIT	PAPER NUMBER
2166	

DATE MAILED: 02/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/629,939	SHYAM ET AL.
	Examiner	Art Unit
	Leon J. Harper	2166

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _29 July 2003_.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-30_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-30_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _29 July 2003_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _2/6/06_.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   This office action is in response to the application 10629939 filed on 7/29/2003.

Claims 1-30 are pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 11 recites the limitation " the cached keys" in line 2. There is insufficient

antecedent basis for this limitation in the claim. The claim refers to the cached keys

however there is no previous mention of cached keys in claim 11 or claim 1 the claim

upon which claim 11 depends on.

Claim 17 recites the limitation " the cached keys" in line 2. There is insufficient

antecedent basis for this limitation in the claim. The claim refers to the cached keys

however there is no previous mention of cached keys in claim 17 or claim 13 the claim

upon which claim 17 depends on.

Claim 29 recites the limitation " the cached keys" in line 3. There is insufficient

antecedent basis for this limitation in the claim. The claim refers to the cached keys

however there is no previous mention of cached keys in claim 29 or claim 19 the claim

upon which claim 29 depends on.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over US

5551027 (hereinafter Choy) in view of US 20020032678 (hereinafter Cornwell) and in

further view of Linux Man page for fetch (hereinafter SGI).

As for claim 1 Choy discloses: wherein rows of the base table are stored in table

partitions and wherein there is one index partition for each determined table partition

(See column 7 lines 42-46), wherein each index partition includes nodes, wherein each

node in each index partition includes at least one key column value from a

corresponding table row in the table partition associated with the index partition and a

location identifier identifying the corresponding table row in the corresponding table

partition (See column 7 lines 19-29 and column 7 lines 38-40); determining a set of nodes, one from each index partition, whose key column value satisfies the query predicate (See column 11 lines 24-27), selecting one node from the set; and returning data from the table row identified by the location identifier in the selected node (See column 11 lines 43-47).

Choy however, does not explicitly disclose receiving a fetch request to fetch data from a base table that satisfies a query predicate, and in response to the fetch request. Cornwell however, does disclose receiving a fetch request to fetch data from a base table that satisfies a query predicate (See paragraph 0087). SGI also discloses fetch request both receiving and responding to (See SGI page 2). It would have been obvious to an artisan of ordinary skill in the pertinent art to have incorporated the teachings of Levine and SGI into the system of Choy. The modification would have been obvious because fetch request are very efficient ways of searching, which has been a problem in the art (See Choy column 2 lines 55-59).

As for claim 2 the rejection of claim 1 is incorporated, and further Choy discloses: determining whether to modify a direction (See column 8 lines 31-35); modifying the direction (See column 9 lines 11-16) if the determination is made to modify, and determining the set of nodes based on the direction (See column 9 lines 42-46). Choy however does not disclose that this determination, modification, and determining are done in response to a fetch. SGI discloses a fetch command (See page 1). It would

have been obvious to an artisan of ordinary skill in the pertinent art to have incorporated

the teaching of SGI into the system of Choy. The modification would have been obvious

because the direction of a fetch can be forward or backward, and since each individual

query can be anywhere in the database.

As for claim 3 the rejection of claim 2 is incorporated, and further Cornwell

discloses: wherein determining whether to modify the direction of the fetch request is

based on a current fetch direction and whether the current fetch direction is opposite an

ordering of the index partitions (See paragraph 0094).

As for claim 4 the rejection of claim 2 is incorporated, and further Cornwell

discloses: setting the fetch direction to backward if the fetch direction is backward and

the fetch direction is not opposite index ordering or if the fetch direction is forward and

the fetch direction is opposite index ordering', and setting the fetch direction to forward if

the fetch direction is backward and the fetch direction is opposite index ordering or if the

fetch direction is forward and the fetch direction is not opposite index ordering (See

paragraph 0099).

As for claim 5 the rejection of claim 2 is incorporated, and further Cornwell

discloses: if the fetch request is a first fetch of the fetch request, then selecting one

node starting from one of: a lowest key value from each index partition if the fetch

direction is forward or highest key value from each index partition if the fetch direction is backward (See paragraph 0095).

As for claim 6 the rejection of claim 2 is incorporated, and further Cornwell discloses: if the fetch request is not a first fetch of the fetch request, then determining whether a previous direction of a previous fetch request is a same direction as the direction of the fetch request, wherein the direction of the fetch request is capable of having been modified (See paragraph 0098); and if the previous and current directions are different, then discarding all saved nodes for the index partitions and selecting one node from a last selected node (See paragraph 0095).

As for claim 7 the rejection of claim 6 is incorporated, and further Cornwell discloses: if the previous and current directions are the same, then scanning in the direction of the fetch request from the previously saved node in each index partition (See paragraph 0096).

As for claim 8 the rejection of claim 1 is incorporated, and further Cornwell discloses: receiving a subsequent fetch request to fetch data from the base table (See paragraph 0094), replacing a previously selected node selected in a previous fetch request in the set with one node in the index partition including the previously selected node whose key column value satisfies the query predicate to form a modified set;

selecting one node from the modified set; and returning the table row identified by the

location identifier in the node selected from the modified set (See paragraph 0095).

As for claim 9 the rejection of claim 8 is incorporated, and further Cornwell

discloses: wherein the subsequent fetch request comprises a fetch relative request to

fetch a row that is multiple number of rows from the previously selected node (See

paragraph 0095 "cursor is set to a number of rows"), further comprising: performing the

steps of replacing the previously selected node and selecting one node multiple number

of times to determine the selected node to return to the fetch relative request to satisfy a

fetch quantity (See paragraph 0095).

As for claim 10 the rejection of claim 8 is incorporated, and further Cornwell

discloses: wherein the subsequent fetch request comprises a fetch absolute request to

fetch a row that is multiple number of rows from one end of the table (See first two lines

of paragraph 0099), further comprising: determining a new set of nodes, one from each

index partition, by scanning from one end of the index partitions for a first node whose

key column value satisfies the query predicate and whose key column value is greater

than the previously selected node if fetching forward and the key is less than the

previously selected node if fetching backward', performing the steps of replacing the

previously selected node and selecting one node a number of times that is one less

than the number of rows indicated in the fetch absolute request to determine the

selected node to return to the fetch relative request; and performing the steps of

replacing the previously selected node and selecting one node the multiple number of times to determine the selected node to return to the fetch relative request (See paragraph 0099).

As for claim 11 the rejection of claim 1 is incorporated, and further Choy discloses: determining a new set of nodes from each index partition; and caching the determined new set of nodes when performing the fetch operation (See column 8 line 65- column 9 line 6).

Choy however, does not explicitly disclose: discarding the cached keys if the fetch request is in an opposite direction of a previous fetch request; Cornwell however does disclose: discarding the cached keys if the fetch request is in an opposite direction of a previous fetch request (See paragraph 0095 and the movement of the cursor).

As for claim 12 the rejection of claim 1 is incorporated, and further Cornwell discloses: processing the fetch request to determine set of nodes in the backward direction in the previous fetch request (See paragraph 0095 "setting I = I-j"); inverting the keys and sorting the inverted keys; and selecting the one node containing the lowest inverted key to return (See last 5 lines of paragraph 0095).

Claims 13,14 are system claims corresponding to method claims 1 and 2, and are thus rejected for the same reasons set forth in the rejection of claims 1 and 2.

Claim 15 is a system claim corresponding to method claim 4 and is thus rejected for the same reasons set forth in the rejection of claim 4.

Claim 16 is a system claim corresponding to method claim 8 and is thus rejected for the same reasons set forth in the rejection of claim 8.

Claim 17 is a system claim corresponding to method claim 11 and is thus rejected for the same reasons set forth in the rejection of claim 11.

Claim 18 is a system claim corresponding to method claim 12 and is thus rejected for the same reasons set forth in the rejection of claim 12.

Claims 19-30 are article of manufacture claims corresponding to method claims 1- 12 respectively, and are thus rejected for the same reasons set forth in the rejection of claims 1- 12.

Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leon J. Harper whose telephone number is 571-272-0759. The examiner can normally be reached on 7:30AM - 4:00Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hosain T. Alam can be reached on 571-272-3978. The fax phone number .

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

LJH
Leon J Harper
February 6, 2006

MOHAMMAD ALI
PRIMARY EXAMINER